Foundation Copy

Washington State Department of Transportation

Memorandum

Date: January 13, 1999

From: T.M. Allen/N. T. Dbaibo
OSC Geotechnical Branch

Phone: (360) 709-5469

Subject: SR- 167, OL-2305
15th Avenue SW to 15th Avenue NW
HOV Lanes - Stage 3,
MP 13.73 to MP 15.76
Geotechnical Recommendations for
Maintenance Pad

To: T.M. Smith / F. Miller
NW Region, NB82-29

As requested, we are providing you with geotechnical recommendations for the design of the widening of SR-18 along the X2 Line for the construction of the maintenance pad to access luminaire no. 21. The construction of the widening will be between stations X2 186+74 and 192+44 and will require filling. The maximum height of the fill will reach approximately 2.5 feet at station 189+60. Maximum fill width will be 5.2 m (17 ft) and will taper at 15:1 in plan view to match the shoulder of SR-18.

The analysis, conclusions and recommendations contained in this memorandum are based on the project description, and subsurface information supplied your office. It is further assumed that the subsurface conditions as interpreted from the borings are representative of the subsurface conditions throughout the project area. If during construction, subsurface conditions are different from those encountered in the exploratory borings, or appear to be present beneath or beyond the excavations, we should be advised so that we can assist you and re-evaluate our recommendations.

Site Soil Conditions

The soil conditions at the project site were interpreted from existing exploratory boring performed for the design of luminaire no. 21. The exploration performed by your office, dated 8/10/1998, consisted of one boring extending to a depth of 8 m (26.5 feet). The boring indicate that the site is underlain by poorly graded, loose and medium dense sand to the total depth explored. The soil consistency increased with depth as reflected by higher blow count values.

Groundwater was encountered at the surface.

Geotechnical Recommendations

The proposed maintenance pad can be constructed as planned. A layer of construction geotextile for separation or soil stabilization, as described in Standard Specifications section 9-33.2, Table 3, should be used. Select or Common Borrow material as described in the Standard Specifications Sections 9-03 should be used for the pad construction. The pad construction should be in accordance with Section 2-03.3(14)B and compaction methods as described in Section 2-03.3(14)C. It should be noted that, if common borrow is used during the rainy season or if its moisture content is above optimum it will be very difficult to compact. Final slopes should be constructed at inclinations no steeper than 2H:1V. Settlement of the embankment fill will vary depending on the actual fill amount placed. Because of the sandy composition of the on-site soil, we anticipate that most of the settlement will occur as the fill is being placed. Additional settlement can occur as the pad is being loaded from the cranes required for maintenance. The settlement will vary depending on the out-riggers configurations and whether timber or steel cribbing is used to spread the applied loads.

Closure

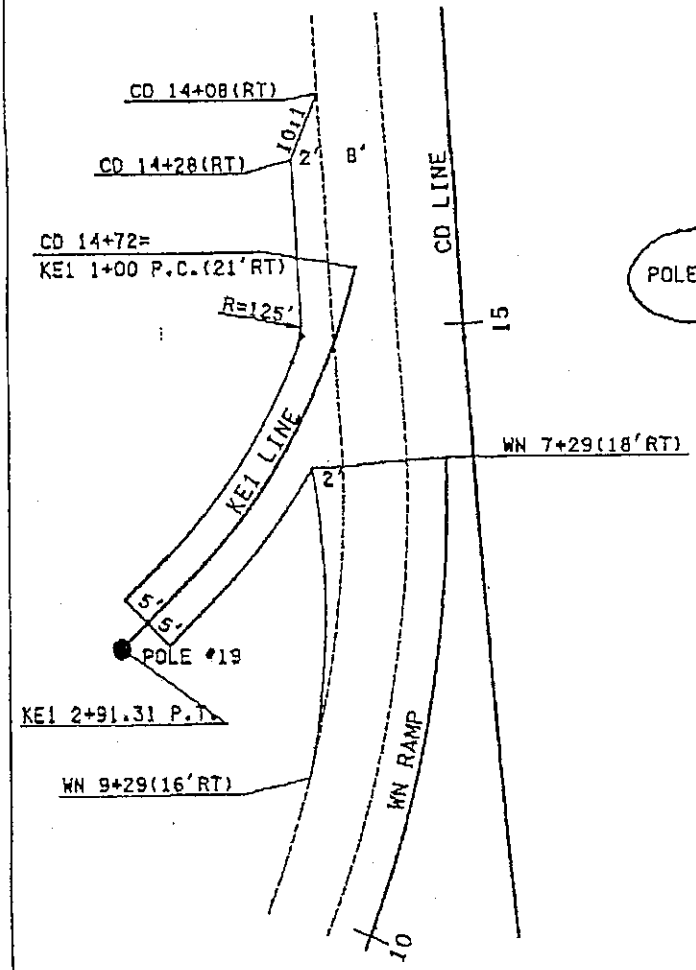
We trust this information is sufficient at this time. Should you have questions or require further information, please contact Nabil Dbaibo at (360) 709-5469 or Jim Cuthbertson at (360) 709-5452.

TMA:ntd

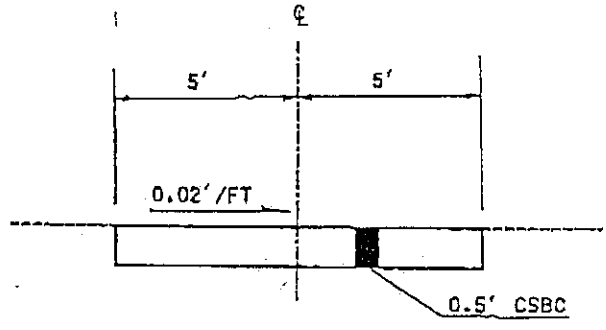
NTD

Attachments

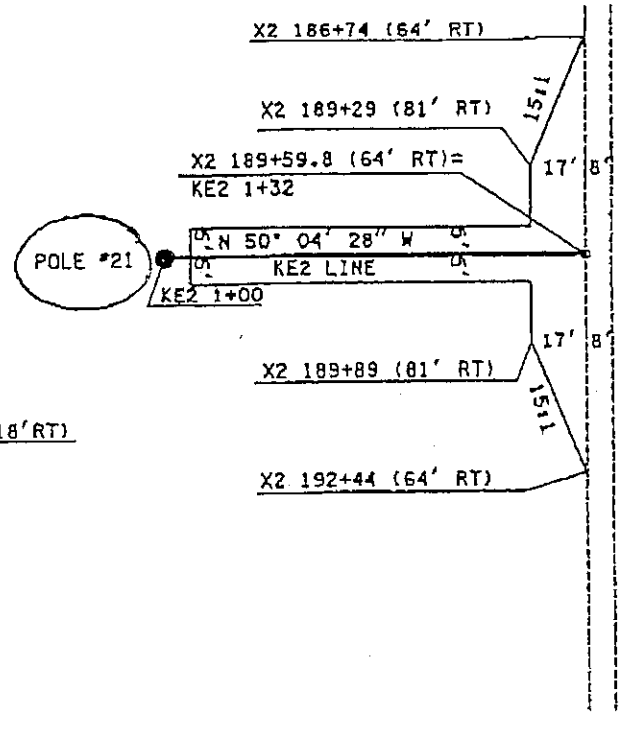
cc: K. Ezeokeke, NW NB82-114
J. Johnson, NW NB82-143



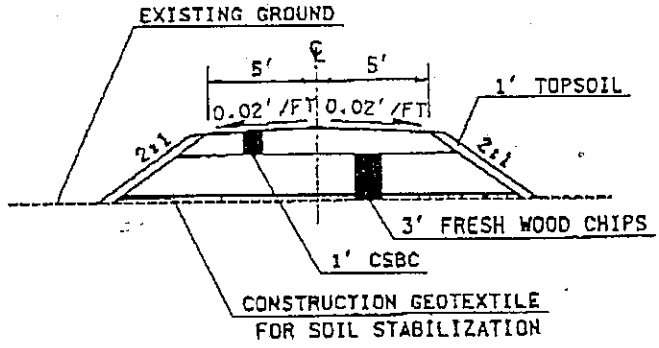
LUMINAIRE POLE #19 STA. WN 9+12.8 (99.9' RT)



CK LINE CROSS SECTION



LUMINAIRE POLE #21 STA. X2 189+59.8 (96.0' RT)



NOTE:

KE2 LINE CROSS SECTION

KE2 1+00 TO 1+15

KE2 LINE PROFILE DATA	
STATION	ELEVATION
1+00.00	66.75
1+10.00	70.77
1+20.00	70.80
1+32.00	69.78

NOT TO SCALE

2

DESIGNED BY K. EZEOKEKE				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
ENTERED BY H. GOUDARZI				JOB NUMBER 98A032		ENVIRONMENTAL SERVICE
CHECKED BY M. ASKARIAN				CONTRACT NO.		
PROJ. ENGR. J. JOHNSON						
REGIONAL ADM. J. OKAMOTO						
	DATE	DATE	REVISION	BY		

LOG OF TEST BORING

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

S.R. 167 Section 15th s.w. to 15th n.w. HOV Job No. OL-2305

Hole No. TH#21 For Cont. Sec.

Station X2 189+60 Offset 135.0' RIGHT Ground El.

Type Of Boring AUGERS Drill CME-850 Casing W.T. El. MINUS 0.0'

Inspector VERNON F. WILLIAMS Starting Date 8\10\98 Sheet 1 of 2

DEPTH	BLOWS / FT.	PROFILE	SAMPLE #'s	DESCRIPTION OF MATERIAL
	D-1			
	3		0\\3	very loose,black,wet,SP/SM,poorly graded,fine,SAND,with
				silt and trace of organic,RECOVERY,0.8'
5.0'	U-2			
				very loose,black,wet,SP/SM,poorly graded,fine,SAND,with
				silt and trace of organic,RECOVERY,2.0'
	D-3			
	9		2\3\6	loose,black,water bearing,SP/SM,poorly graded,fine,SAND,
10.0'	U-4			with silt,RECOVERY,1.0'
				loose,black,water bearing,SP/SM,poorly graded,fine,SAND,
				with silt,with wood fragmentsRECOVERY,10"
	D-5			met with resistance could only push 10"
	5		2\2\3	loose,black,water bearing,SP/SM,poorly graded,fine,SAND,
15.0'	D-6			
	9		1\4\5	loose,black,water bearing,SP/SM,poorly graded,fine,SAND,
				with silt,with wood fragmentsRECOVERY,1.5'
	D-7			
	19		1\9\10	medium dense,black,water bearing,SP/SM,poorly graded,
20.0'				fine,SAND,with silt and wood fragments,RECOVERY,1.5'

organic's	silt's	sand's	gravel's

DOT
NW Region Form

Original to Materials Engineer
Copy to Bridge Engineer
Copy to District Administrator
Copy to

15TH S.W. TO 15TH N.W. HOV

Hole No. TH#21 Sub Sect. OL-2305 SR 167 Sheet 2 of 2

DEPTH	BLOWS / FT.	PROFILE	SAMPLE#	DESCRIPTION OF MATERIAL
	D-8			
	19		S1&11	medium dense,black,water bearing,GW/GM,well graded,fine to coarse,
				GRAVEL,with silt and sand,RECOVERY,0.5'
25.0'	D-9			
	38		S12&21	dense,black,water bearing,GW/GM,well graded,fine to coarse,
				GRAVEL,with silt and sand,RECOVERY,0.6'
				END OF BORING AT MINUS 26.5' WATER ELEVATION MINUS 0.0'
30.0'				
35.0'				
40.0'				
45.0'				

WSDOT

NW Region Drill Form

organic's	silt's	sand's	gravel's